REMARKS

Claims 1-19 are pending in this application.

Claims 16-19 have been withdrawn subject to a restriction requirement.

Claims 1-2, 4-7, 9-12 and 14-15 have been rejected.

Claims 3, 8 and 13 have been objected to.

Claims 10, 11, 14 and 15 have been amended.

Claims 1-19 remain pending in this application.

Reconsideration of Claims 1-19, as amended, is respectfully requested.

I.   ALLOWABLE SUBJECT MATTER

The Applicant thanks the Examiner for the indication that Claims 3, 8 and 13 would be allowable if rewritten in independent form to incorporate the elements of their respective base claims and any intervening claims. Because the Applicant believes that the remaining claims in this application are allowable, the Applicant has not rewritten Claims 3, 8 and 13 in independent form.

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II.   REJECTION UNDER 35 U.S.C. § 102

The September 9, 2004 Office Action rejected Claims 1-2, 4-7, 9-12 and 14-15 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,125,103 to Bäuml et al. ("*Bäuml*"). The Applicant respectfully traverses these rejections.

A prior art reference anticipates the claimed invention under 35 U.S.C. §102 only if every element of a claimed invention is identically shown in that single reference, arranged as they are in the claims. MPEP §2131; *In re Bond*, 910 F.2d 831, 832, 15 U.S.P.Q.2d 1566, 1567 (Fed. Cir. 1990). Anticipation is only shown where each and every limitation of the claimed invention is found in a single prior art reference. MPEP §2131; *In re Donohue*, 766 F.2d 531, 534, 226 U.S.P.Q. 619, 621 (Fed. Cir. 1985).

The system described in *Bäuml* represents blocks of information by mapping them onto a block (vector) Au of length N of carrier values. (*Bäuml*, Column 4, Lines 5-9). A modification vector of complex values, $P^{(U)}$, is multiplied, component-wise, by the block of carrier values. (*Bäuml*, Column 4, Lines 28-36). That is, *Bäuml* generates the product Au $P^{(U)}$ by multiplying the a complexed valued vector $P^{(U)}$ times the components of the block (vector) Au. "The product Au$P^{(U)}$ is then formed component-wise . . . ." (*Bäuml*, Column 4, Lines 35-36). From those products, a favorable transmit signal is chosen for actual transmission. (*Bäuml*, Column 4, Lines 39-41). The Applicant respectfully points out that a system like that taught by *Bäuml* is described in the last paragraph of the Applicant's Background of the Invention:

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In the known transmission system the crest factor is reduced in two steps: first a
number of alternative sequences are generated for each dataword, and second the
alternative sequence with the lowest peak power value is selected for transmission to
the receiver. The alternative sequences are generated by <u>multiplying</u> carrier values,
i.e. the multicarrier representation of the datawords, <u>with arbitrarily selected
modification vectors</u>. (Specification, Page 2, Lines 3- 7) (Emphasis added).

In the Applicant's invention, "the alternative sequences are generated in a different way."

(Specification, Page 2, Lines 10-12). That is, unlike *Bäuml*, the alternative sequences in the present

invention are <u>not</u> generated by multiplication. Note that Claim 1 of *Bäuml* states that the alternative,

information-equivalent sequences of *Bäuml* are formed from carrier values Au by <u>multiplication</u>

with the modification vector values $P^{(U)}$.

With regard to independent Claims 1, 6 and 11, the September 9, 2004 Office Action

identifies and equates the modification vector values $P^{(1)}$... $P^{(U)}$ of *Bäuml* with the "mutually

different digital words" set forth in the claims. The Applicant respectfully submits that

the modification vector values $P^{(1)}$... $P^{(U)}$ of *Bäuml* that serve as multiplication factors are not

"mutually different digital words" as that term is used by the Applicant. The fact that the

modification vector values $P^{(1)}$... $P^{(U)}$ of *Bäuml* may be digital is not relevant.

The patent application states "Figure 3 shows a block diagram of a generator 20 for use in a

transmission system according to the invention. The generator 20 comprises an augmentor 30 that

generates for each dataword 19 a number of intermediate sequences 41 by combining mutually

different digital words with the dataword 19. The intermediate sequences 41 can be generated by

the augmentor 40 simply by <u>placing</u> the digital words in front of the dataword 19 or by <u>placing</u>

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the dataword 19 in front of the digital words. The generator 20 further comprises a scrambler 42 that <u>scrambles</u> the intermediate sequences 41 in order to form the alternative sequences 21." (Specification, Page 4, Lines 26-32) (Emphasis added).

The specification of the patent application makes clear that the combination of the "mutually different digital words" with each dataword in not done multiplicatively. The digital words are "placed" in front of a dataword or a dataword is "placed" in front of the digital words. The modification vector values $P^{(1)}$... $P^{(U)}$ of *Bäuml* are multipliers and not "digital words" that are placed with respect to a dataword.

Further, the patent application states "Figure 5 shows a block diagram of another generator 20 for use in a transmission system according to the invention. The generator 20 comprises a splitter 60 that splits each dataword 19 and a number of mutually different digital words into fragments 61. These fragments may have mutually different lengths. The generator 20 further comprises a combiner 62 that combines the fragments in order to form the alternative sequences 21. The combiner 62 generates for each digital word an alternative sequence by randomly mixing the fragments of that digital word with the fragments of the dataword 19." (Specification, Page 6, Lines 1-7).

This portion of the patent application makes clear that the "mutually different digital words" are not the same as the modification vector values $P^{(1)}$... $P^{(U)}$ of *Bäuml*. The modification vector values $P^{(1)}$... $P^{(U)}$ of *Bäuml* do not split into fragments that can be randomly mixed with the fragments of a dataword.

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Therefore, the *Bäuml* reference does not teach the use of "mutually different digital words" as recited in independent Claims 1, 6 and 11. As a result, the *Bäuml* reference fails to anticipate this element of the Applicant's invention as claimed.

With regard to independent Claims 1, 6 and 11, the September 9, 2004 Office Action identifies and equates the values "au(1)... au(U)" of *Bäuml* (i.e., the "output of mixers") with the "alternative digital sequences" set forth in the claims. The Applicant respectfully submits that the values "au(1)... au(U)" of *Bäuml* are the results of the multiplication process described and claimed by *Bäuml*. Therefore, the values "au(1)... au(U)" of *Bäuml* are not equivalent to the "alternative digital sequences" that are generated by the method of the invention. The fact that the values "au(1)... au(U)" of *Bäuml* may be digital is not relevant. *Bäuml* does not describe alternative digital sequences formed by combining mutually different digital words with a dataword, as recited in independent Claims 1, 6 and 11. Thus, *Bäuml* also fails to anticipate this element of the Applicant's invention as claimed.

For these reasons, *Bäuml* fails to anticipate the Applicant's invention as recited in Claims 1, 6 and 11 (and their dependent claims). Accordingly, the Applicants respectfully request withdrawal of the § 102 rejections and full allowance of Claims 1-15.

The Applicant has amended Claims 10, 11, 14 and 15 to amend the words "alternative sequences" to read "alternative digital sequences" so that the claim language in Claims 10, 11, 14 and 15 will be consistent with the claim language of the remaining claims.

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III.   CONCLUSION

For the reasons given above, the Applicant respectfully asserts that all pending claims are in condition for allowance. The Applicant thus respectfully requests reconsideration and full allowance of all pending claims and that this application be passed to issue. The Applicant denies and statement, position or averment of the Examiner that is not specifically addressed by the foregoing argument and response. The Applicant reserves the right to submit further arguments in support of his above stated position as well as the right to introduce relevant secondary considerations including long-felt but unresolved needs in the industry, failed attempts by others to invent the invention, and the like, should that become necessary.

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SUMMARY

If any outstanding issues remain, or if the Examiner has any further suggestions for expediting allowance of this application, the Applicant respectfully invites the Examiner to contact the undersigned at the telephone number indicated below or at *wmunck@davismunck.com.*

The Commissioner is hereby authorized to charge any additional fees connected with this communication (including any extension of time fees) or credit any overpayment to Deposit Account No. 50-0208.

Respectfully submitted,

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